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10 SUPERIOR COURT OF THE STATE OF CALIFORNIA  
11 IN AND FOR THE COUNTY OF ALAMEDA

13 CENTER FOR BIOLOGICAL DIVERSITY )  
14 and SIERRA CLUB, )

15 Plaintiffs/Petitioners, )

16 vs. )

17 CALIFORNIA DEPARTMENT OF )  
18 CONSERVATION, DIVISION OF OIL, )  
19 GAS, AND GEOTHERMAL RESOURCES; )  
and DOES 1 through 100, inclusive, )

20 Defendants/Respondents. )  
21

22 WESTERN STATES PETROLEUM )  
23 ASSOCIATION, CALIFORNIA )  
INDEPENDENT PETROLEUM )  
24 ASSOCIATION and INDEPENDENT OIL )  
PRODUCERS AGENCY, )

25 Respondents-in-Intervention. )  
26  
27

Case No. RG15769302

DECLARATION OF BLAINE I.  
GREEN SUPPORTING THE  
OPPOSITION OF WESTERN STATES  
PETROLEUM ASSOCIATION,  
CALIFORNIA INDEPENDENT  
PETROLEUM ASSOCIATION AND  
INDEPENDENT OIL PRODUCERS  
AGENCY IN RESPONSE TO  
PLAINTIFFS/PETITIONERS'  
OPENING BRIEF

Date: July 15, 2016  
Time: 8:30 a.m.  
Dept.: 17  
Judge: Hon. George C. Hernandez, Jr.

Action Filed: May 7, 2015  
Trial Date: July 15, 2016

1 I, Blaine I. Green, declare as follows:

2 1. I am an attorney at law, duly licensed to practice in the State of California,  
3 and am counsel of the law firm of Pillsbury Winthrop Shaw Pittman LLP, attorneys for  
4 Respondents-in-Intervention Western States Petroleum Association, California Independent  
5 Petroleum Association and Independent Oil Producers Agency (collectively, "Industry  
6 Groups"). I make this declaration in support of Industry Groups' Opposition to  
7 Plaintiffs/Petitioners' Opening Brief in this matter. This declaration is based on my  
8 personal knowledge, and if called as a witness I could and would testify competently to  
9 such matters.

10 2. Attached hereto as Exhibit A is a true and correct copy of the State Water  
11 Resources Control Board Resolution 88-63, "Sources of Drinking Water" (May 19, 1988),  
12 as revised by Resolution 2006-0008 (February 1, 2006). On June 14, 2016, I downloaded  
13 this document from the State Water Resources Control Board ("State Water Board")  
14 official website at:  
15 [http://www.swrcb.ca.gov/board\\_decisions/adopted\\_orders/resolutions/2006/rs2006\\_0008\\_r](http://www.swrcb.ca.gov/board_decisions/adopted_orders/resolutions/2006/rs2006_0008_rev_rs88_63.pdf)  
16 [ev\\_rs88\\_63.pdf](http://www.swrcb.ca.gov/board_decisions/adopted_orders/resolutions/2006/rs2006_0008_rev_rs88_63.pdf).

17 3. Attached hereto as Exhibit B is a true and correct copy of a letter from the  
18 United States Environmental Protection Agency ("EPA") to the California Department of  
19 Conservation, Division of Oil, Gas and Geothermal Resources ("DOGGR") and the State  
20 Water Board, dated May 28, 2015. On June 14, 2016, I downloaded this document from  
21 the California Department of Conservation's official website, at  
22 <ftp://ftp.consrv.ca.gov/pub/oil/UIC%20Files/EPA-UICltr5-28-15.pdf>.

23 4. Attached hereto as Exhibit C is a true and correct copy of the "Renewal Plan  
24 for Oil and Gas Regulation" issued by DOGGR, dated October 2015. On June 14, 2016, I  
25 downloaded this document from the California Department of Conservation's official  
26 website, at [ftp://ftp.consrv.ca.gov/pub/oil/Publications/Renewal%20Plan%2010-08-](ftp://ftp.consrv.ca.gov/pub/oil/Publications/Renewal%20Plan%2010-08-2015.pdf)  
27 [2015.pdf](ftp://ftp.consrv.ca.gov/pub/oil/Publications/Renewal%20Plan%2010-08-2015.pdf).

28

1           5.       Attached hereto as Exhibit D is a true and correct copy of a letter from EPA  
2 to DOGGR and the State Water Board, dated November 3, 2015. On June 14, 2016, I  
3 downloaded this document from the California Department of Conservation's official  
4 website, at [ftp://ftp.consrv.ca.gov/pub/oil/UIC%20Files/20151103%20US%20EPA%20-](ftp://ftp.consrv.ca.gov/pub/oil/UIC%20Files/20151103%20US%20EPA%20-%20Response%20to%20joint%20RWQCG-DOGGR%20letters%20of%202015-10-15.PDF)  
5 [%20Response%20to%20joint%20RWQCG-DOGGR%20letters%20of%202015-10-](ftp://ftp.consrv.ca.gov/pub/oil/UIC%20Files/20151103%20US%20EPA%20-%20Response%20to%20joint%20RWQCG-DOGGR%20letters%20of%202015-10-15.PDF)  
6 [15.PDF](ftp://ftp.consrv.ca.gov/pub/oil/UIC%20Files/20151103%20US%20EPA%20-%20Response%20to%20joint%20RWQCG-DOGGR%20letters%20of%202015-10-15.PDF).

7           6.       Attached hereto as Exhibit E is a true and correct copy of a letter from the  
8 State Water Board to EPA (with a cc copy sent to DOGGR), dated March 22, 2016.

9           7.       Attached hereto as Exhibit F is a true and correct copy of a letter from EPA  
10 to DOGGR and the State Water Board, dated May 17, 2016. On June 14, 2016, I  
11 downloaded this document from EPA's official website, at  
12 [https://www.epa.gov/sites/production/files/2016-](https://www.epa.gov/sites/production/files/2016-05/documents/20160517_ltr_epa_montgomery_to_cadoggr_harris_re_uic_prog_updates.pdf)  
13 [05/documents/20160517\\_ltr\\_epa\\_montgomery\\_to\\_cadoggr\\_harris\\_re\\_uic\\_prog\\_updates.p](https://www.epa.gov/sites/production/files/2016-05/documents/20160517_ltr_epa_montgomery_to_cadoggr_harris_re_uic_prog_updates.pdf)  
14 [df](https://www.epa.gov/sites/production/files/2016-05/documents/20160517_ltr_epa_montgomery_to_cadoggr_harris_re_uic_prog_updates.pdf).

15  
16           I declare under penalty of perjury under the laws of the State of California that the  
17 foregoing is true and correct.

18           Executed this 14th day of June, 2016, at San Francisco, California.

19  
20  
21             
22           Blaine I. Green

# **EXHIBIT A**

STATE WATER RESOURCES CONTROL BOARD

RESOLUTION NO. 88-63

(as revised by Resolution No. 2006-0008)

ADOPTION OF POLICY ENTITLED  
"SOURCES OF DRINKING WATER"

WHEREAS

1. California Water Code section 13140 provides that the State Board shall formulate and adopt State Policy for Water Quality Control; and,
2. California Water Code section 13240 provides that Water Quality Plans "shall conform" to any State Policy for Water Quality Control; and,
3. The Regional Boards can conform the Water Quality Control Plans to this policy by amending the plans to incorporate the policy; and,
4. The State Board must approve any conforming amendments pursuant to Water Code section 13245; and,
5. "Sources of drinking water" shall be defined in the Water Quality Control Plans as those water bodies with beneficial uses designated as suitable, or potentially suitable, for municipal or domestic water supply (MUN); and,
6. The Water Quality Control Plans do not provide sufficient detail in the description of water bodies designated MUN to judge clearly what is, or is not, a source of drinking water for various purposes.
7. On February 1, 2006, the State Board adopted Resolution No. 2006-0008, which amended this policy to establish a site-specific exception for Old Alamo Creek.

THEREFORE BE IT RESOLVED:

All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards<sup>1</sup> with the exception<sup>2</sup> of:

---

<sup>1</sup> This policy does not affect any determination of what is a potential source of drinking water for the limited purposes of maintaining a surface impoundment after June 30, 1988, pursuant to Section 25208.4 of the Health and Safety Code.

<sup>2</sup> This policy contains general categories for exceptions from the policy. On February 1, 2006, the State Board adopted Resolution No. 2006-0008, which established a site-specific exception from the policy for Old Alamo Creek. The rationale for the site-specific exception is contained in the resolution and in State Board Order WQO 2002-0015, II.A.2.d.

1. Surface and ground waters where:

- a. The total dissolved solids (TDS) exceed 3,000 mg/L (5,000 uS/cm, electrical conductivity) and it is not reasonably expected by Regional Boards to supply a public water system, or
- b. There is contamination, either by natural processes or by human activity (unrelated to the specific pollution incident), that cannot reasonably be treated for domestic use using either Best Management Practices or best economically achievable treatment practices, or
- c. The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day.

2. Surface Waters Where:

- a. The water is in systems designed or modified to collect or treat municipal or industrial wastewaters, process waters, mining wastewaters, or storm water runoff, provided that the discharge from such systems is monitored to assure compliance with all relevant water quality objectives as required by the Regional Boards; or,
- b. The water is in systems designed or modified for the primary purpose of conveying or holding agricultural drainage waters, provided that the discharge from such systems is monitored to assure compliance with all relevant water quality objectives as required by the Regional Boards.

3. Ground water where:

The aquifer is regulated as a geothermal energy producing source or has been exempted administratively pursuant to 40 Code of Federal Regulations, section 146.4 for the purpose of underground injection of fluids associated with the production of hydrocarbon or geothermal energy, provided that these fluids do not constitute a hazardous waste under 40 CFR, section 261.3.

4. Regional Board Authority to Amend Use Designations:

Any body of water which has a current specific designation previously assigned to it by a Regional Board in Water Quality Control Plans may retain that designation at the Regional Board's discretion. Where a body of water is not currently designated as MUN but, in the opinion of a Regional Board, is presently or potentially suitable for MUN, the Regional Board shall include MUN in the beneficial use designation.

The Regional Boards shall also assure that the beneficial uses of municipal and domestic supply are designated for protection wherever those uses are presently being attained, and assure that any changes in beneficial use designations for waters of the State are

consistent with all applicable regulations adopted by the Environmental Protection Agency.

The Regional Boards shall review and revise the Water Quality Control Plans to incorporate this policy.

#### **CERTIFICATION**

The undersigned, Acting Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a policy duly and regularly adopted at a meeting of the State Water Resources Control Board held on May 19, 1988, and amended on February 1, 2006.

A handwritten signature in dark ink, appearing to read "Selica Potter", is written over a horizontal line.

Selica Potter  
Acting Clerk to the Board

# **EXHIBIT B**





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

May 28, 2015

Jonathan Bishop  
Chief Deputy Director  
California State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812-100

Steven Bohlen  
State Oil and Gas Supervisor  
Division of Oil, gas, and Geothermal Resources  
California Department of Conservation  
801 K Street. MS-18-05  
Sacramento, CA 95814-3530

Dear Messrs. Bishop and Bohlen:

Thank you for your May 15, 2015 letter describing the recent steps taken to address ongoing compliance issues with California's Class II Underground Injection Control (UIC) program. Your letter discussed the State's efforts to issue emergency regulations for Class II wells, conduct well reviews/evaluations, update the inventory of potential injection wells of concern, including cyclic steam wells, and issue enforcement and information collection orders to injection well operators.

Emergency Rulemaking for Injection Wells

The State's emergency regulations to codify deadlines for injection well operators to cease injection, absent EPA-approved aquifer exemptions, is a critical step in the State's plan to return the California Class II UIC program to compliance with the Safe Drinking Water Act. We look forward to the State's continued progress in this important administrative process by initiating a permanent rulemaking. Your letter indicates this initiation is on schedule to commence June 1, 2015.

Drinking Water Protection Well Evaluations

As we noted in our letter of March 9, 2015, it is important to identify the full universe of wells that are injecting into non-exempt aquifers, and to prioritize the review of these wells based on the potential risk to high quality ground water and existing water supply wells. Your May 15<sup>th</sup> submittal described completion of an initial review of Category 1 Injection wells (i.e., Class II disposal wells injecting into non-exempt, non-hydrocarbon bearing aquifers, and those injecting into the 11 aquifers historically treated as exempt). As part of this review, you identified 53 disposal wells injecting into aquifers that have total

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dissolved solids (TDS) concentrations below 3,000 ppm and have the potential to impact water supply wells, based on your initial screening criteria. To date, the State has assured shut-in of 23 of these 53 wells. For the remaining 30 wells in this sub-category, I understand that the Department of Conservation will clarify the status of each of these 30 wells within the next two weeks and take appropriate action (e.g., shut-in order, permit rescission) for any of the wells that could otherwise impact water supply wells. Please inform EPA of the State's evaluation of the 30 wells as soon as these determinations are made.

In addition, your letter describes 207 injection wells disposing into non-hydrocarbon-producing aquifers with 3,000-10,000 ppm TDS levels that you have determined require a more in-depth review to assess the need for further action to protect existing water supply wells. Since the purpose of the well evaluations/reviews is specifically to identify and address situations where injection wells are potentially impacting existing water supplies, it is critical for the State to expedite completion of this review. As we recently discussed, EPA strongly recommends that any of these 207 disposal wells that are within a one-mile radius of a water supply well be given top priority for completion of this review and immediate action to cease injection operations found to potentially endanger existing water supply wells. Please provide further information on the status of these disposal wells as your review continues, and no later than our next monthly update in June.

#### Updated Injection Well Inventory

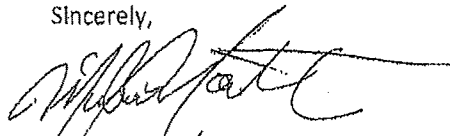
In response to EPA's request, the State's May 15<sup>th</sup> submittal included information about roughly 3,600 cyclic steam wells (a type of well that injects steam into a hydrocarbon-producing zone and also produces oil from the same wellbore) that may be injecting outside currently exempt zones. According to your letter, these wells are not associated with a permitted injection project in the Division's databases. In our recent discussions, you clarified that these cyclic steam wells would be included by the State as additional Category 2 wells – Class II enhanced oil recovery (EOR) wells injecting into non-exempt, hydrocarbon-bearing aquifers. As your letter notes, the Category 2 wells are scheduled to be reviewed and analyzed by July 31, 2015. In addition, the State has a target of submitting 90% of proposed aquifer exemptions for Category 2 wells by February 15, 2016. The final compliance deadline for the Category 2 injection wells, as codified in the State's recent emergency regulations, is February 15, 2017.

#### Enforcement and Information Collection Orders

The State's submittal included information on the 23 wells shut-in by enforcement orders or through voluntary permit relinquishment, as well as 157 other injection wells that received orders from the applicable Regional Water Quality Control Boards for data collection purposes. As the State continues to receive data from operators and evaluate the potential for injection wells to impact water supply wells, EPA expects to receive regular updates of these activities. EPA should be notified immediately if any injection well is determined to be potentially endangering an existing water supply well. Other updates should be provided as a regular item on our monthly update meeting agenda.

We look forward to continued efforts to protect California's drinking water resources and ensure full compliance with the Safe Drinking Water Act. Please don't hesitate to contact me if you have any questions or concerns.

Sincerely,

A handwritten signature in black ink, appearing to read 'Michael Montgomery', with a long horizontal flourish extending to the right.

Michael Montgomery  
Associate Director  
Water Division

# **EXHIBIT C**

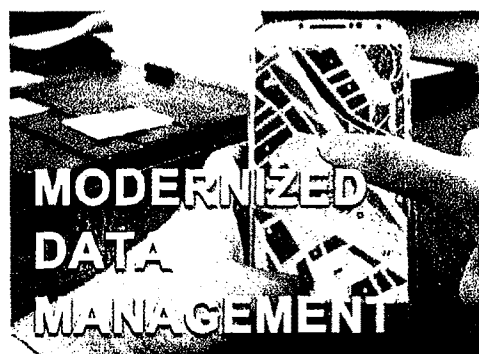
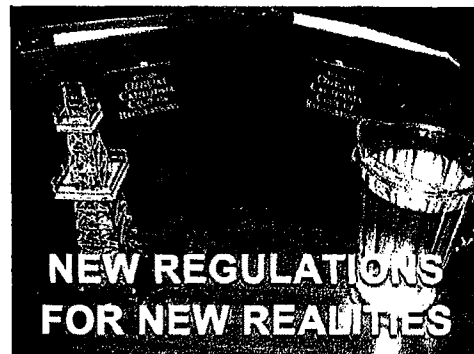


California Department of Conservation  
Division of Oil, Gas, and Geothermal Resources

# RENEWAL PLAN FOR OIL AND GAS REGULATION

CHANGING PAST PRACTICES TO USHER IN A NEW ERA  
OF OIL AND GAS REGULATION

October 2015



David Bunn, PhD, Director  
Steven R. Bohlen, PhD, State Oil and Gas Supervisor

# RENEWAL PLAN FOR OIL AND GAS REGULATION

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## INTRODUCTION

The Department of Conservation's Division of Oil, Gas, and Geothermal Resources (Division) was established in 1915 as a regulator of oil and gas industry practices. The initial focus of regulation was the protection of oil and gas resources in the state from production practices that could harm the ultimate level of hydrocarbon recovery. Primary examples include well spacing requirements and authority to limit production rates. However, those regulations and the focus of the Division evolved and came to include the protection of public health, safety, and the environment.

California oil and gas operators produce approximately 600,000 barrels of oil each day. About 35 percent of the oil used in California comes from California oil and gas reservoirs. These resources are produced through more than 80,000 active oil and gas wells owned and operated by more than 450 operators and service companies. Most of the production comes from the San Joaquin Valley, but operators also produce oil and gas from coastal areas like the Los Angeles Basin, Ventura, Santa Barbara, and around Santa Maria. The Division oversees that production from 6 field offices with a present staff of over 275.

As the Division approached its 100<sup>th</sup> year, the need for thorough assessment of its performance and capacity became apparent. The call for that review came in many forms. In 2010, the Division requested an independent U.S. Environmental Protection Agency audit, and in 2011 that audit identified shortcomings in the Underground Injection Control (UIC) Program. Growing public concern about the practice of hydraulic fracturing raised questions about the Division's data collection and transparency. State lawmakers began to express concern that the Division's regulations and practices were inadequate to address modern industry activities. In 2012, as a part of the FY12-13 budget development process, the Department of Conservation described the changes needed to improve the policies, practices, and regulations administered by the Division to match society's current expectations.

All of these developments have helped to shape this Renewal Plan for the Division. The Plan will guide Division reforms over the next two years and accelerate the progress under way since 2012. It will serve as a means of measuring progress toward the goal of an effective regulatory program that ensures the protection of public health and the environment in the oil fields of California.

The Renewal Plan features four themes, each with multiple objectives:

- Regulatory Overhaul
- New Regulations for New Realities
- Modernized Data Management
- Ensuring a High-Quality Workforce



# RENEWAL PLAN FOR OIL AND GAS REGULATION

## SUMMARY OF RENEWAL PLAN SCHEDULE

### OBJECTIVE 1: REGULATORY OVERHAUL

Activity	Start	Finish	Status
<b>Action 1.1 – Review Injection Projects</b>			
Injection Project Reviews (all districts)	10/15/15	April '17	
Revisions to PALs, if needed (all districts)	Varies	Oct. '18	
<b>Action 1.2 – Aquifer Exemption Review</b>			
Obtain Exemption or Shut-In Injection Wells in Non-Exempt Aquifers	June '14	Feb. '17	IP
<b>Action 1.3 – Review / Revise Existing Regulatory Standards</b>			
Phase 1 Rulemakings	July '15	Dec. '16	IP
Phase 2 Rulemakings	Fall '16	Early '18	

Key: ✓ = Complete IP = In Progress

### OBJECTIVE 2: NEW REGULATIONS FOR NEW REALITIES

Activity	Start	Finish	Status
<b>Action 2.1 – Adopt New Rules for Well Stimulation (WST)</b>			
Adopt Interim WST Regulations	12/13/13	1/1/14	✓
Adopt Permanent WST Regulations	11/15/13	7/1/15	✓
<b>Action 2.2 – Adopt New Rules for Cyclic Steaming</b>			
Cyclic Steam Rulemaking	July '15	Dec. '16	IP
<b>Action 2.3 – Develop Capacity to Anticipate Regulatory Needs</b>			
Establish Emerging Technologies and Regulations Unit	July '14	Feb. '16	IP

Key: ✓ = Complete IP = In Progress

### OBJECTIVE 3: MODERNIZE DATA MANAGEMENT

Activity	Start	Finish	Status
<b>Action 3.1 – Improve Well Information Management System and Business Processes</b>	July '15	Middle '18 *	IP
<b>Action 3.2 – Improve Transparency of Division Data</b>			
Interim Well Stimulation Treatment Notice System Implemented	Oct. '13	March '14	✓
Well Finder Application Launched	Oct. '13	Jan. '14	✓
SB4-Compliant Post-WST Chemical Disclosure Site On-Line	Oct. '13	1/1/16	IP
SB1281 Reporting On-line	Oct '14	8/12/15	✓
<b>Action 3.3 – Develop e-Permitting Functionality</b>	July '15	Late '18 *	IP

Key: ✓ = Complete IP = In Progress

\* = Dates are rough estimates/targets for IT development project

# RENEWAL PLAN FOR OIL AND GAS REGULATION

## SUMMARY OF RENEWAL PLAN SCHEDULE (CONT.)

### OBJECTIVE 4: ENSURE HIGH-QUALITY WORKFORCE

Activity	Start	Finish	Status
<b>Action 4.1 – Obtain Adequate Staffing</b>			
FY10-11 -> FY12-13 BCPs			✓
FY14-15 -> FY15-16 BCPs		Spring '16	IP
<b>Action 4.2 – Improve Recruitment and Outreach</b>			
Develop on-line exam functionality for technical job classes	Fall '14	Spring '15	✓
Improve recruitment beyond traditional efforts	Spring '14	Ongoing	IP
Review/revise classifications to recognize work experience	July '15	Jan '16	IP
<b>Action 4.3 – Reorganize Division</b>			
Administrative reorganization under existing authority	Sept. '15	Sept. '16	IP
Review statutory organizational requirements for necessity	Sept. '15	Nov. '15	IP
<b>Action 4.4 – Implement Comprehensive and Continuous Training</b>			
Hire Technical Training Coordinator	Sept. '15	Dec. '15	IP
Improve Training Plan	July '15	Fall '15	IP
Establish safety video library and mandatory training	Sept. '15	May '16	IP
<b>Action 4.5 -- Develop Best Practices for Staff / Managers</b>			
Internal assessment of current policies and procedures	Mar. '15	June '16	
Development of Best Practice Standards	Fall '15	July '16	IP
Implementation of Best Practice Standards	July '16	Ongoing	

Key: ✓ = Complete IP = In Progress

## OBJECTIVE 1:



## **OBJECTIVE 1: REGULATORY OVERHAUL**

The Division's existing regulations—and how they are applied—are under review. Some regulations have been in effect without change for decades. Some fail to take into account advances in drilling technology and our understanding of environmental and public health protection. The Division enforced some regulations inconsistently and, in some cases, incorrectly—such as permitting injection wells into areas not previously approved for injection. To correct the Division's past practices on underground injection control, oilfield operators will either: (1) receive authorization to continue to inject into formations because the formation fluids were already unsuitable for drinking or agricultural use; or (2) operators will be ordered to cease injection into those formations.

### **Action Item 1.1: Review Injection Projects**

Under the Underground Injection Control (UIC) Program, oil and gas operators apply to conduct “projects,” which usually comprise multiple wells drilled as a part of an overall system to extract oil and gas. Some wells in a “project” inject water, steam, or other gas into a hydrocarbon formation. That injection moves oil and gas toward production wells that are also part of the “project” and that bring the oil to the surface. A project may also include disposal wells. Thousands of projects have been approved since 1983, the year the U.S. EPA recognized the Division’s UIC Program as being suitable to meet the requirements of the federal Safe Drinking Water Act for injection of fluids associated with oil and gas production.

The Division will conduct a review of every project it has approved. This review will examine all active injection projects in the state to determine if project files contain all required documentation and that the project reflects appropriate protection of groundwater sources. Mechanical integrity tests will be confirmed. If additional conditions or reporting requirements are identified as necessary during the review, new Project Approval Letters (PAL)—which describe Division requirements of individual operators on each project—will be required.

#### ***Timeline:***

<b>Activity</b>	<b>Start</b>	<b>Finish</b>	<b>Status</b>
<b>Injection Project Reviews</b>	10/15/15		
Districts 3 (Orcutt) and 6 (Sacramento)		May '16	
Districts 2 (Ventura) and 5 (Coalinga)		July '16	
District 1 (Cypress)		Aug. '16	
District 4 (Bakersfield)		April '17	
<b>Revisions to PALs (if needed)</b>			
Districts 3 (Orcutt) and 6 (Sacramento)		April '17	
Districts 2 (Ventura) and 5 (Coalinga)		Oct. '17	
District 1 (Cypress)		Feb. '18	
District 4 (Bakersfield)		Oct. '18	

Key: ✓ = Complete      IP = In Progress

Note: Reviews to be conducted at the Division's District Office level. Schedule for completion varies by district because of the varied number of projects in each district and available staffing.

## RENEWAL PLAN FOR OIL AND GAS REGULATION

### Action Item 1.2: Aquifer Exemption Review

In 1983, the U.S. EPA found that the Division's UIC Program meets federal Safe Drinking Water Act provisions related to injection of Class II fluids into the ground and delegated to the Division primary responsibility, or "primacy," in the regulation of Class II injection. Class II fluids are those associated with the production of oil and gas, most commonly salty water that comes to the surface with the oil and gas from the underground oil reservoir. Certain underground formations were identified by the Division and U.S. EPA as appropriate to receive injection of Class II fluids. These are called "exempt aquifers" because they are formations/aquifers that contain water that meets the standard for protection under the Safe Drinking Water Act, but some other characteristic makes the water in that formation unsuitable for drinking (i.e., it contains oil or some other naturally-occurring chemical like arsenic or boron). However, over the 30-year history of the UIC Program, the Division has permitted injection into some formations that were not approved to receive such injection.

The Division identified this problem to the U.S. EPA in mid- 2014. Since then, the Division, U.S. EPA and the State Water Resources Control Board have developed a plan to address wells injecting into non-exempt aquifers. The wells injecting into non-exempt aquifers have been identified, categorized by type (water disposal or enhanced oil recovery), and prioritized by the relative risk the wells pose to existing water supply wells. Some wells were found to pose an immediate threat and, as a result, the Division either ordered shut or obtained permit relinquishment for 23 of the 5,625 wells reviewed. As the review continues, the Division may order further wells immediately shut down to protect groundwater, though it is important to note that most of the remaining wells are injecting into known oil-bearing formations. For the other wells injecting into non-exempted formations, two paths exist. Either sufficient evidence must be presented by operators that the formation should be exempted by the U.S. EPA under the Safe Drinking Water Act, or the Division will order the operators to cease injection through those wells.

#### Timeline:

Activity	Start	Finish	Status
Obtain Exemption or Shut-In Injection Wells in Non-Exempt Aquifers	June '14		IP
WD Wells into sub-3000 mg/L TDS aquifers		10/15/15	✓
WD or EOR Wells into Historically Treated As Exempt Aquifers		12/31/16	IP
WD Wells into Non-Oil-Containing Aquifers With Water 3,000-10,000 mg/L TDS		2/15/17	
EOR Wells into Oil-Containing, sub-10,000 mg/L TDS Aquifers		2/15/17	

Key: ✓ = Complete IP = In Progress

- Shut-In Orders can and have been issued prior to the target completion dates above
- WD = Water Disposal well and is generally not into an oil-bearing formation.
- EOR = Enhanced Oil Recovery Injection for these projects is implicitly into a hydrocarbon bearing zone, the water within which could only be fit for beneficial use following extensive and expensive purification.

## RENEWAL PLAN FOR OIL AND GAS REGULATION

### **Action Item 1.3: Review / Revise Existing Regulatory Standards**

All regulations administered by the Division are being reviewed and evaluated. In some cases, regulations that previously left broad latitude for interpretation will be made more specific. In other cases, new regulations are needed to address new technologies and to facilitate best practices. Some practices that were once too expensive for operators are now, thanks to improved technology, financially feasible and need to be regulated.

The Division will consider revision to existing regulations in two phases. In the first phase, the Division intends to address the following:

- Clarification of standards for zonal isolation of injection projects
- Clarification of the quality of water to be protected when constructing wells
- Update of well construction standards
- Clarification of the process and standards for setting maximum allowable pressures for injection operations.

In the second phase, the Division will address these following issues:

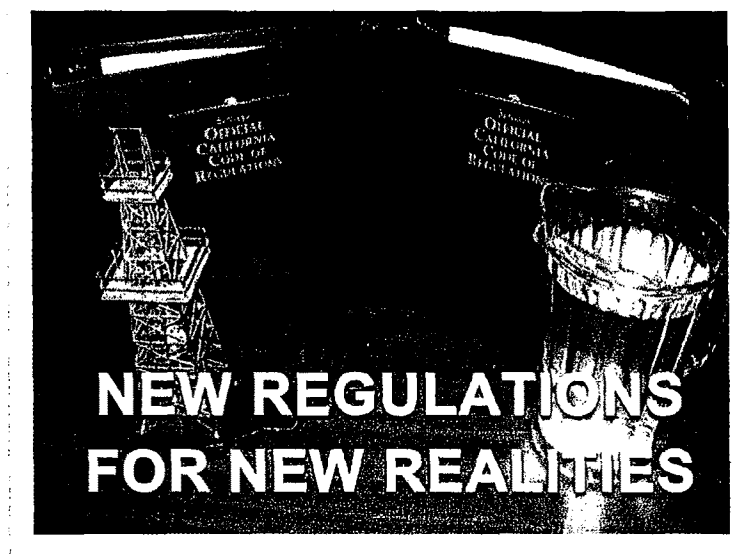
- Codification of ongoing UIC project review requirements
- Establishment of standards for securing idle wells
- Revision of idle well testing requirements

#### ***Timeline:***

Activity	Start	Finish	Status
Phase 1 Rulemakings ( <i>incl. informal and formal</i> )	July '15		
Identify interested parties and soliciting concerns and/or suggestions		Oct. '15	IP
Draft proposed regulations and conduct pre-regulatory consultations		Nov. '15	
Begin formal rulemaking processes		Jan. '16	
Conclude rulemaking		Dec. '16	
Phase 2 Rulemakings ( <i>incl. informal and formal</i> )	Fall '16		
Identify interested parties and soliciting concerns and/or suggestions		Early '17	
Draft proposed regulations and conduct pre-regulatory consultations		Early '17	
Begin formal rulemaking processes		Early '17	
Conclude rulemaking		Early '18	

Key: ✓ = Complete      IP = In Progress

## OBJECTIVE 2:



## **OBJECTIVE 2: NEW REGULATIONS FOR NEW REALITIES**

Until 2013, the Division regulated the oil and gas industry under a statutory and regulatory construct that had changed little in the preceding four or five decades—while industry practice evolved steadily over those years. In some cases, the Division simply continued to apply existing general rules to practices that warranted specific rules. In other cases, existing rules loosely fit the evolving practice, and new regulations should have been developed to regulate those practices. The Division lacked the staff, skills, and processes to monitor evolving industry production practices and thus did not adequately anticipate or adapt to changing industry operations.

### **Action Item 2.1: Adopt New Rules for Well Stimulation (WST)**

Prior to 2010, hydraulic fracturing and other forms of formation stimulation (often called “well stimulation”) were considered “downhole” maintenance practices that did not require specialized regulation. To prevent damage to groundwater, the Division relied upon existing rules governing well integrity and provisions against fluid migration out of intended zones. In 2012, the Legislature gave clear direction to the Department of Conservation (Department) to begin rulemaking for hydraulic fracturing and the Department began such a process. In December 2012, Senate Bill 4 (Pavley) was introduced to require permitting for hydraulic fracturing and other forms of “well stimulation.” Senate Bill 4 set aggressive deadlines for Department implementation of regulations.

The Department launched a rulemaking process for SB 4 almost as soon as it was signed into law in September 2013. The Department also drafted Emergency Interim Regulations that took effect the same date as SB 4—January 1, 2014. Those Interim Regulations were extended twice by the Department and once by the Legislature until July 1, 2015. Along with the adoption of Interim Regulations, the Division initiated and completed a lengthier, formal rulemaking process by the statutory deadline of January 1, 2015. Those formal regulations went into effect on July 1, 2015, the day after the expiration of the Interim Regulations, and they are the strongest well stimulation regulations in the nation.

#### **Timeline:**

<b>Activity</b>	<b>Start</b>	<b>Finish</b>	<b>Status</b>
<b>Adopt Interim WST Regulations</b>			
Initiate rulemaking		12/13/13	✓
Issue Interim Rules		12/13/13	✓
Interim Rules effective		1/1/14	✓
<b>Adopt Permanent WST Regulations</b>			
Initiate rulemaking	11/15/14		✓
Circulate draft regulations for public review/comment, including public hearings	11/15/13	1/14/14	✓
Circulate second draft of regulations for public review/comment, including public hearings	6/13/14	7/28/14	✓
Circulate third draft of regulations for public review	10/9/14	10/24/14	✓
Office Of Administrative Law approves regulations		12/30/14	✓
Permanent Regulations effective (by statute)		7/1/15	✓

Key: ✓ = Complete      IP = In Progress



## RENEWAL PLAN FOR OIL AND GAS REGULATION

### **Action Item 2.2: Adopt New Rules for Cyclic Steaming**

Oil operators have applied cyclic steaming to oil reservoirs since the 1980s to heat the oil-bearing formations so that the oil can flow more easily to the well and be pumped to the surface. Traditional enhanced oil recovery (EOR) techniques involve application of water or steam into a formation by one well and production through another well. In a cyclic steam operation, injection and production operations alternate or "cycle" through the same well. Steam might be injected for several hours or days, allowed to remain in the formation for some time, and then the well is put into production to bring oil to the surface. The Division has long regulated cyclic steam operations as if they were EOR operations. Cyclic steaming, however, poses potential risks that regular EOR operations may not experience. Cycling of hot and cooler periods may affect well bore integrity. In shallow formations, steam can migrate out of the intended injection zone, sometimes impacting the surface or presenting hazards to workers.

To ensure that cyclic steam operations do not damage wells, allow fluids to migrate into zones not intended for injection led to failures of zonal isolation, or harm oil field workers, the Division needs more specific and robust regulations for cyclic steam operations. The Division has started the process for adopting new regulations specific to cyclic steam operations. Those regulations are expected to be completed by December 2016.

#### ***Timeline:***

Activity	Start	Finish	Status
Cyclic Steam Rulemaking	July, '15		
Identify interested parties and solicit concerns and/or suggestions		Oct., '15	IP
Draft proposed regulations and conduct pre-regulatory consultations		Nov. '15	
Begin formal rulemaking processes		Jan. '16	
Conclude rulemaking		Dec. '16	

Key: ✓ = Complete      IP = In Progress

## RENEWAL PLAN FOR OIL AND GAS REGULATION

### **Action Item 2.3: Develop Capacity to Anticipate Regulatory Needs**

The Division historically has reacted to changes in oil and gas production industry practices by applying existing regulations and trusting that risks have been ameliorated. The Division has been slow to react to emerging production trends. In the case of hydraulic fracturing, for example, the Division was focused on application of current law instead of strategizing how regulation should evolve with production practice.

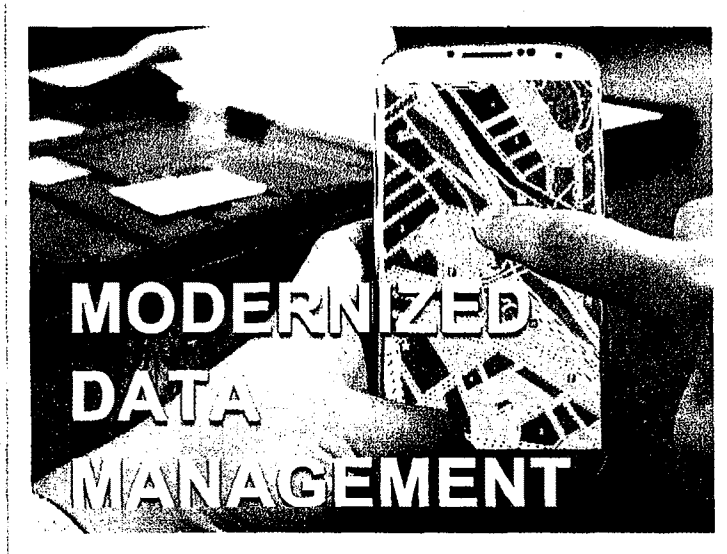
To create a regulatory culture that proposes solutions to risks posed by evolving production practices, the Division is creating a new "Emerging Technologies and Regulations" unit. A precursor is the "New Program Development" unit, which was charged with leading the development of well-stimulation regulations in 2013-14. This unit works with the industry, academia, and others to identify emerging production techniques, assess corresponding risks, and determine whether existing regulations sufficiently guard against risk. Where they do not, this unit is charged with developing draft regulations and working to adopt appropriate changes.

#### ***Timeline:***

Activity	Start	Finish	Status
Establish Emerging Technologies and Regulations Unit			
Formation of New Program Development Unit in headquarters	July '14	Dec. '14	✓
Reorganization of Division	Sept. '15	Sept. '16	
Formal establishment of ETR Unit	Sept. '15	Feb. '16	

Key: ✓ = Complete      IP = In Progress

**OBJECTIVE 3:**  
**MODERNIZE DATA MANAGEMENT**



### **OBJECTIVE 3: MODERNIZE DATA MANAGEMENT**

For decades, the Division relied upon paper filing to manage information. Oil production was tracked electronically, but other data about permitting of wells, well construction details, and well logs were maintained in paper form. Operators submit applications to drill wells on paper forms, for instance, and Division staff enter some of the data manually into Division systems. New regulations for well stimulation will require review of sophisticated industry analyses, including 3-dimensional subsurface modeling. The Division lacks the technology to recreate such models, which limits its ability to independently verify industry submittals. Lack of digital record-keeping hampers the Division's ability to analyze data and respond to public, legislative, and public inquiries.

#### **Action Item 3.1: Improve Well Information Management System and Business Processes**

The Division has begun the process to overhaul all business and information technology systems. The Division is working with the California Department of Technology to evaluate current data management systems and develop a plan to meet future data needs. At the same time, the Division is reviewing the various business processes employed within different Division districts. In some cases, the Division is creating business processes where none existed. These scoping and business process identification efforts form the foundation of the new well information system design. Subsequent steps in the procurement process include identifying a suitable data management solution from options that include (1) purchase of off-the-shelf software, (2) modification of off-the-shelf software, or (3) development of custom, stand-alone software. Development, testing and validation must occur before the final launch of the information system to users. However, those processes may occur somewhat in parallel -- instead of sequentially -- provided the Division and the Department of Technology can identify appropriate processes to manage project development risk. Once the system is usable for new data intake from permits and other ongoing Division activities, the Division will need to migrate legacy data from more than a century of well drilling history into the system.

#### **Timeline:**

<b>Activity</b>	<b>Start</b>	<b>Finish</b>	<b>Status</b>
Scoping of Well Information Management System	July '15	Nov '15	IP
Identifying/defining business processes	June '15	Nov '15	IP
Selection of business solution	Feb. '16		
Development	Feb '16	Dec. '16*	
Testing and validation	Middle '16*	Jan. '17*	
Launch	Middle '16*		
Legacy data ,migration	Nov. '15*	Middle '18*	

Key: ✓ = Complete      IP = In Progress

\* = Dates are rough estimates/targets for IT development project

## RENEWAL PLAN FOR OIL AND GAS REGULATION

### **Action Item 3.2: Improve Transparency of Division Data**

For most of the Division's history, the Division publicly presented data about the oil and gas industry once a year through an Annual Report of the Supervisor. The Division answered inquiries about particular wells (1) in an ad hoc manner or (2) by allowing operators or members of the public to review data on microfiche files physically held in district offices. The Division began scanning well records to PDF format files in 2004, though some districts experienced difficulties with the contractors who conducted the scanning jobs. Once those files were scanned to PDF format, however, the data were not significantly more useful than when it had been on microfiche. Data were available online, eliminating the need to travel to a district office to view a paper or microfiche file, but the PDF files were no more searchable than paper, making analysis of data an insurmountable chore.

With the 2013 enactment of Senate Bill 4 (Pavley), the Division is required to make more information available to the public. The Division met the requirement to begin providing disclosure of chemicals used in well stimulation jobs in an interim fashion. SB 4 envisions additional functionality being built into the disclosure system by January 1, 2016. The Department's information technology staff worked with the Division to develop a Well Finder application that works in conjunction with the disclosure webpage to provide a degree of web-based GIS capability for the public. Additionally, the Department is placing oil operators' water use records online, as reported under the provisions of SB 1281 (Pavley), enacted in 2014. Initial publication of those records has been complicated by the volume of data required, as well as operators' difficulty in gathering data, although the first quarter 2015 results now have been posted. The Division will further development its systems to increase transparency of data and the amount of data available, as well as enhance its online GIS capabilities.

#### ***Timeline:***

Activity	Start	Finish	Status
Interim Well Stimulation Treatment Notice System	Oct. '13	March '14	✓
"WellFinder" application	Jan. '13	Jan. '14	✓
Interim post-WST chemical disclosure site on-line	Oct '13	Jan '14	✓
SB4-compliant post-WST chemical disclosure site on-line	Oct. '13	1/1/16	IP
SB1281 Reporting On-line	Oct. '14	8/12/15	✓

Key: ✓ = Complete      IP = In Progress

## RENEWAL PLAN FOR OIL AND GAS REGULATION

### **Action Item 3.3: Develop e-Permitting Functionality**

While many operators submit digital applications to drill wells or perform other oil field activities, the Division still incorporates the information by hand, sometimes printing the application and re-entering data. In some cases, the Division can accept electronic files from operators, provided the operators format the data in a manner that can be read by the Division's data management systems. In such cases, the electronic filing is conducted not by design of the permitting process, but as a work-around alternative to hand-entering the data.

The Division needs to establish electronic permitting. This would free Division staff to perform more productive regulatory duties, such as reviewing and analyzing proposals and conducting field inspections. Electronic functionality is being built as part of the overall Well Information Management System discussed in Action 3.1, and the timetable is not different than the final launch deliverable.

#### ***Timeline:***

Activity	Start	Finish	Status
Incorporate e-permitting in Well Information Management System	July '15	Late '18	IP

Key: ✓ = Complete      IP = In Progress

**OBJECTIVE 4:**  
**ENSURE HIGH QUALITY WORKFORCE**



## RENEWAL PLAN FOR OIL AND GAS REGULATION

### OBJECTIVE 4: ENSURE HIGH-QUALITY WORKFORCE

Until recent budget cycles, the Division did not request—and therefore was not given—additional staff and resources necessary to fulfill its growing mandates. The result was a dramatically understaffed organization that had to (1) take short-cuts, (2) establish work-around solutions to meet regulatory requirements, or (3) simply not complete the requirements. The staff in the Division have not received consistent high-quality training about the role of the regulator or about the industry practices they regulate. The industry work experience some staff brought to the Division is now outdated. Current industry pay rates far exceed entry-level pay rates for civil service, and retention of new staff is difficult. Lack of consistent training about evolving industry practices puts the Division at a disadvantage when staff evaluate proposed permits or conduct field inspections. Furthermore, the Division's organizational structure is outdated, having been built at a time when communication was slower and permitting decisions had to be made independently in district offices proximate to oil fields. That structure fostered insular thinking, a lack of cooperation, and inconsistent application of statewide rules.

#### **Action Item 4.1: Obtain Adequate Staffing**

The Division has requested resources for additional staff in six consecutive budgets and has been granted those staff. Some staff have been dedicated to UIC Program review and reform, others to implement recent legislation such as SB 4 (Pavley) from 2013 and SB 1281 (Pavley) from 2014.

These are welcome steps toward the Division having sufficient resources to meet workload requirements. However, bolstering staff is a slow process. Civil service hiring processes must be completed and new staff must be trained.

Newly-hired staff need to be brought to a functioning level before it can be determined whether resource levels need adjustment. The assessment is complicated when the Division is, at the same time, taking on new regulatory duties. The renewal process for the Division must proceed in a step-wise manner that allows for time to implement the last new mandate before imposing the next.

#### ***Timeline:***

Activity	Start	Finish	Status
FY10-11 Budget Change Proposal (BCP) for UIC Program (34 PY)			✓
FY 11-12 BCP for Permitting and Enforcement staffing (36PY (6LT))			✓
FY 12-13 BCP for Compliance and Support staff (18PY)			✓
FY 14-15 BCP for SB 4 Implementation (65 PY (5LT))	July '14	March '16	IP
FY 15-16 BCP for UIC Program (23 PY)	July '15	June '16	IP
FY 15-16 BCP for Oil and Gas Data Management (21 LT PY)	July '15	June '16	IP

Key: ✓ = Complete      IP = In Progress



## RENEWAL PLAN FOR OIL AND GAS REGULATION

### **Action Item 4.2: Improve Recruitment and Outreach**

Technical positions such as Associate Oil and Gas Engineer and Senior Oil and Gas Engineer are critical to the Division's mission. Exams have been offered in the past, and the number and quality of candidates have been low. As a result, the Division lacked enough qualified candidates to fill all of its vacancies. Division recruitment and outreach have been limited to posting job announcements in publications obscure to most non-governmental employees.

To get better-qualified job candidates, the Division contracted with the Department of Human Resources (CalHR) to create an online exam series for two, specialized and technical classifications. The Division and CalHR entered into an agreement in late 2014 to create online exams continuously open to applicants. Development of the exams was expected to require approximately 12 months. The Division and CalHR dramatically shortened this timeline. These exams are now online and generating applicants continuously.

To improve the reach of the Division's recruitment efforts, the Division is embarking on outreach in non-traditional (for government agencies) venues. The Division has posted notices in professional journals targeting petroleum engineers and geologists. Department Human Resources staff visit undergraduate and graduate student recruitment fairs. Most recently, the Division consulted with LinkedIn about using the online professional networking site to promote Division employment to people with experience in engineering, petroleum geology, and related subjects.

In addition, the Division has learned through interviews and discussions with interested candidates that the technical competence required for these specialized classifications may be acquired in ways other than education and earning of degrees. Work experience may meet the classification specifications for knowledge, skills, and abilities, but the educational minimum requirements disqualify some otherwise experienced potential candidates. The Department is reviewing with CalHR the minimum educational qualifications to determine if work experience can be substituted in certain cases. We expect to have this process completed in the next six months to generate even more qualified candidates for our vacant positions.

#### ***Timeline:***

Activity	Start	Finish	Status
Develop on-line exam functionality for technical job classes	Fall '14	Spring '15	✓
Improve recruitment beyond traditional efforts	Spring '14	Ongoing	IP
Review/revise classifications to recognize work experience	July '15	Jan '16	IP

Key: ✓ = Complete      IP = In Progress

## RENEWAL PLAN FOR OIL AND GAS REGULATION

### **Action Item 4.3: Reorganize Division**

Currently, the Division is organized into six districts, each with a district office. These districts are geographically-based and structured around California's oil fields. Historically, district offices, headed by a "District Deputy," were authorized to make decisions on behalf of the State Oil and Gas Supervisor—a necessary feature of implementing statewide permitting requirements. The alternative would have created slow permitting processes as applications made their way to Sacramento before the Internet.

A review of Division business processes shows that this district model can lead to inconsistent application of statewide rules. There are some rules for which legitimate differences exist field-by-field. For instance, an oil field where wells are drilled to productive depths of 6,000 feet might legitimately have different well casing requirements than a field with wells drilling to 800-foot depths. However, some programs do require statewide consistency.

In spite of the challenges a district model poses, the district model must be maintained for other reasons. Division staff must regularly visit wells for inspections. Division district staff must be familiar with industry operations in order to be effective regulators, and familiarity requires frequent, direct contact.

The Division is reviewing options for reorganization to improve cooperation and consistency among districts, improve technical and programmatic leadership, and allow more focused, consistent application of specific regulatory programs with statewide application. Such programs include the UIC program, Well Stimulation regulation, Idle Well Management, Abandoned Well Remediation, Technical Training, and others. This envisioned reorganization will maintain district presence in the oil fields, but will recognize efficiency in modern travel options and in modern communication tools. Reorganization also will ensure a more consistent application of statewide priorities.

Division leadership believe effect reorganization can occur under existing authority. However, the full scope of intended reorganization may require revisiting the statutory construct that calls for "six districts." Reorganization likely will require input from many stakeholders as the Division balances needs including access to field operations, and access to the Division by the public and operators.

#### ***Timeline:***

Activity	Start	Finish	Status
Administrative reorganization under existing authority	Sept. '15	Sept. '16	
Review statutory organizational requirements	Sept. '15	Nov. '15	

Key: ✓ = Complete      IP = In Progress

## RENEWAL PLAN FOR OIL AND GAS REGULATION

### **Action Item 4.4: Implement Comprehensive and Continuous Training**

The Division's technical staff have had little opportunity for professional training. As a result, many of the Division's regulatory staff are significantly less aware of the industry practices they regulate than are the operators the Division regulates.

The Division is establishing the position of a Technical Training Coordinator who will implement the Division's training plan. That plan will be developed in late 2015 and will include necessary training requirements for each level of engineer or other professional staff, as well as a list of knowledge, skills, and abilities that the Division will require professional staff person to maintain.

Training opportunities will include regular cross-district meetings of Division staff to develop teamwork and share important information gained from field oversight and observations. This forum also will serve as a means of sharing information gained from independent training courses completed by professional staff. In particular, the Division is exploring establishing ongoing training course commitments with academic and/or research institutions to ensure that Division personnel have the highest-level, current state-of-the-industry understanding of the production practices the Division regulates.

The Division already has begun implementing some training. The Department of General Services has agreed to produce a video safety library. The videos will provide safety training for field engineers, with emphasis on practices related to well abandonments and blow-out prevention equipment.

#### ***Timeline:***

Activity	Start	Finish	Status
Hire Technical Training Coordinator	Sept. 15	Dec. '15	IP
Improve training plan	July '15	Fall '15	IP
Establish safety video library and mandatory training	Sept. '15	May '16	IP

Key: ✓ = Complete      IP = In Progress

## RENEWAL PLAN FOR OIL AND GAS REGULATION

### **Action Item 4.5: Develop Best Practices for Staff / Managers**

The Division has been reviewing its internal practices. The review occurred as a result of the establishment of new leadership in the Division in 2014, but also as a part of the review of internal business processes for use in establishing new data management systems. These reviews made clear that detailed, up-to-date training manuals for new employees did not exist. Further, Division practices differed widely among districts for implementation of Division regulations, for worker safety, or for administrative processes.

The Division has taken active steps in implementing best practices policies and procedures for its employees. The ongoing efforts include a comprehensive assessment of current Division practices, the development of best practice standards, and implementation of standardized policies and training to define best practices and increase Department effectiveness.

The initial step in improving the department's practices was a comprehensive internal assessment of current policies and procedures. The Division now seeks to achieve consistent "Best Practices" standards and procedures across the Division. When they are completed, these standards will be applied across the Division.

#### ***Timeline:***

Activity	Start	Finish	Status
Internal assessment of current policies and procedures	Mar. '15	June '16	IP
Development of Best Practices Standards	Fall '15	July '16	IP
Implementation of Best Practices Standards	July '16	Ongoing	

Key: ✓ = Complete      IP = In Progress

## **CONCLUSION**

As the Division pursues the Objectives of this Plan, it will become a modern, efficient, collaborative, science-driven agency that intelligently and consistently regulates state oil and gas activities. The Division will use modern field tools, integrated with advanced data management systems, to raise the bar on oversight of the oil and gas industry. Safety will become an integrated cultural norm. Further, the Division will be much better connected with oil and gas-related research activities in industry, academia, and national laboratories. This will help the Division anticipate regulatory challenges and apply regulations with a higher level of understanding of the practices subject to regulation.

The Division will better be able to perform its duties with integrated collaboration of other state agencies to reduce the environmental impact of oil and gas development. Internal monitoring and compliance will be routine and fully integrated with all that the Division does so that our performance can be measured objectively. We will be able to support all interested parties because we will have a higher degree of transparency, allowing stakeholders, decision-makers and the public to more routinely observe Division activities and retrieve information of interest.

# **EXHIBIT D**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

November 3, 2015

Jonathan Bishop  
Chief Deputy Director  
California State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812-100

Steve Bohlen  
State Oil and Gas Supervisor  
Division of Oil, Gas and Geothermal Resources  
801 K Street, MS-18-05  
Sacramento, CA

Dear Messrs: Bishop and Bohlen,

Thank you for your October 15, 2015 letters, which included a completed evaluation of the Category 1 disposal wells subject to the State's October 15, 2015 emergency regulatory shut-in deadline and additional information regarding the Category 2 drinking water risk-based evaluation as a supplement to your July 31, 2015 submittal regarding these wells. In addition, EPA received the Water Board's October 21, 2015 well review summary letter.

We continue to be encouraged by the efforts DOGGR is making to restore the CA Class II UIC Program to compliance, as well as the strong support of the Water Board in this undertaking. In the following we address the specifics of your three letters, as well as the "Detailed Plan for Class II Program Improvements" which was provided in your July 15, 2015 letter, and which was further refined in the DOGGR's October 2015 "Renewal Plan for Oil and Gas Regulation."

October 15, 2015 Shut in Deadline for Category 1 wells

In addition to the prior shut in of 24 wells injecting into non-exempt sub 3,000 ppm TDS formations, the State has assured the shut in of 33 additional injection wells in non-exempt, non-hydrocarbon producing aquifers outside of the 11 aquifers historically treated as exempt (HTAE) by October 15, 2015. By meeting this deadline the State has taken a significant step in the further protection of California's drinking water supplies, as well as advancing UIC Program compliance.

Of the priority 178 Category 1 wells, you have noted there are 83 wells that were permitted to inject into one of the 11 HTAE. In comparing the "Preliminary Assessment of 11 Aquifers Historically Treated as Exempt" analysis provided as Attachment 1 to the State's July 15, 2015 letter with the information provided in Attachment A of the October 15, 2015 letter, there appears to have been some further refinement of the status of some of these wells. We plan to schedule a conference call in the near future to review some of the specifics of the data tables, as well as a few related questions with your staff.

Supplemental Information Regarding the Category 2 Well Evaluation

EPA appreciates the additional analysis provided to explain the risk-based approach used by the State to review and prioritize its evaluation of the Category 2 enhanced recovery wells permitted in non-exempt

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aquifers. The October 15th letter provided updated information regarding the 5,625 Category 2 wells as initially presented in the State's July 31, 2015 letter. EPA concurs with the State's conclusion that water-flood wells, due to the nature of their operation, would pose a greater potential threat to drinking water supply wells than thermal wells; and within the thermal well category, steam flood wells would be more of a concern than cyclic steam wells. We understand there are 3 water flood wells and 3 thermal injection wells that may be of concern and we look forward to receiving updated risk screening results once the operators respond to the information orders being issued by the Water Board. While it remains to be seen if any of those 6 wells meet the state's regulatory criteria for potential shut-in before the February 2017 deadline, it appears the remaining 5,619 wells would be subject to the February 2017 shut in date, unless an aquifer exemption is granted. As the State works with affected operators to develop information regarding aquifer exemption packages to address any of these Category 2 wells, EPA would appreciate being kept informed of their progress regularly at our monthly meetings.

#### Well Review Status

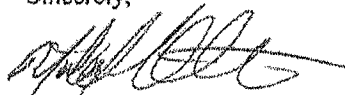
The Water Board's October 21, 2015 letter provides a comprehensive summary of the current status of its risk-based well review. EPA appreciates being brought up to date on the results of this review, and we look forward to being kept informed of the status of the responses to pending information order requests and potential actions by the State in response to new information from operators.

#### DOGGR's Renewal Plan

EPA believes DOGGR's plans for a comprehensive review of all approved Class II projects in the state, as described in the July 15, 2015 submittal, "Detailed Plan for Class II Program Improvements" and further detailed in the October 2015 "Renewal Plan for Oil and Gas Regulation" is an essential aspect of returning the Class II Program to compliance, and key to ensuring protection of public health and drinking water resources. As we discussed at our October 16 meeting, EPA will continue to work together with the State to incorporate a risk-based prioritization of project review milestones and their outcome into the State's overall UIC Program Compliance Plan. As we agreed, our team will further explore this effort in the coming months with a target of establishing a prioritization approach and integrating that approach into the existing program Compliance Schedule in early 2016.

Please don't hesitate to contact me with any questions or concerns.

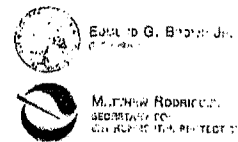
Sincerely,



Michael Montgomery  
Assistant Director, Water Division



# **EXHIBIT E**



## State Water Resources Control Board

March 22, 2016

Mr. Michael Montgomery  
United States Environmental Protection Agency  
Region IX  
75 Hawthorne Street  
San Francisco, CA 94105-3901

Dear Mr. Montgomery:

This letter summarizes the current status of California Water Code section 13267 orders (Information orders) that were issued by applicable Regional Water Quality Control Boards (Regional Water Boards) to oil and gas operators in response to the Underground Injection Control (UIC) well review. The Division of Oil, Gas, and Geothermal Resources (Division) and the State Water Resources Control Board (State Water Board), collectively known as the State, has completed the UIC well review, the results of which are summarized in letters to the USEPA dated May 15, 2015, July 31, 2015 and October 21, 2015.

### UIC Well Review Summary

The Division identified a total of 6,157 UIC wells injecting into non-exempt aquifers for review, of which 532 were originally permitted as disposal wells and 5,625 originally permitted as EOR wells. The State reviewed these 6,157 UIC wells according to the criteria outlined in Enclosure D of the February 6, 2015 letter (Enclosure D) to the United States Environmental Protection Agency (USEPA). As part of the review process, and consistent with Enclosure D, information orders were issued by applicable Regional Water Boards to gather additional information on these UIC wells prior to initiating any further action, if warranted.

### Screening Criteria

The screening criteria used for disposal and non-thermal EOR wells (water flood) are consistent with the criteria outlined in Enclosure D. For thermal EOR wells (steam flood and cyclic steam wells), the State is screening for water supply wells located within one-quarter mile and 300 feet, respectively, of the injection well. This screening distance represents the Division's determination of lateral zone of endangering influence (ZEI) for these types of wells. Based on these criteria, 14 EOR wells are to receive information orders from the Central Valley Regional Water Board.

FRANCIS MARCUS, CHAIR | THOMAS HOWARD, EXECUTIVE DIRECTOR

1001 I Street, Sacramento, CA 95814 | Mailing Address: P.O. Box 100, Sacramento, Ca 95812-0100 | [www.waterboards.ca.gov](http://www.waterboards.ca.gov)

100-11111-1111

**Status of Issued Information Orders**

Regional Water Boards issued 64 information orders to the operators of 243 UIC wells as summarized on the attached table. Most of the orders were for wells (155) permitted to inject into aquifers with less than 3,000 milligrams per liter (mg/L) total dissolved solids (TDS). The remaining orders were for wells permitted to inject into 3,000 to 10,000 TDS aquifers. These 64 information orders were issued between July 2014 and November 2015 and require operators to submit water quality information for the injected fluids and zone(s) of injection and to identify the location of any water supply wells within a one-mile radius of the injection wells.

Information orders will not be issued for the remaining balance of UIC wells identified by the Division (5,691 wells) because they did not meet Enclosure D criteria (for disposal or water flood wells) or the criteria discussed above (for steam flood or cyclic steam wells). A summary of the status of the information orders issued and pending is also summarized below.

The State Water Board and Regional Water Boards are currently evaluating data and information submitted by operators. A UIC well is not considered to be a potential risk to current groundwater resources if any of the following conditions exist: 1) the well is either shown to be properly plugged and abandoned, shut-in, idle, or converted to an oil and gas production well, 2) the well is shown to be currently perforated in a zone that is exempt or greater than 10,000 TDS, or 3) current injection practices demonstrate no impacts to groundwater resources.

Of the 243 UIC wells associated with the information orders:

- One hundred and sixty five (165) wells were determined not to pose a potential risk to groundwater resources.
- Operators for 78 wells have not submitted all of the required information to complete an evaluation of potential impacts to current groundwater resources. The majority of these operators are working cooperatively with Regional Water Board staff to resolve outstanding issues and assemble the required information.

Based on data provided thus far by the operators, water quality in nearby water supply wells have not been impacted by injection activities. The Water Boards will continue to evaluate data received in response to the information orders and will coordinate with the Division if injection activities are impacting groundwater resources.

**Notices of Violations**

Operators that have failed to respond to information orders have been issued Notices of Violations (NOVs) or will receive a NOV. Between August 2014 and January 2016, the Central Valley Regional Board issued 22 NOV letters to the operators of 59 wells. The attached table includes information on which operators received NOVs. In most cases, NOVs were issued due to incomplete or late work plans or technical reports.

**Pending Information Orders**

Information orders are planned to be issued in March 2016 to the operators of an additional 223 wells. Of these, 209 are permitted for disposal into 3,000 to 10,000 TDS aquifers or unsaturated zones (commonly referred to as "air sands"), and an additional 14 are permitted as EOR injection wells.

**Summary**

To date, 64 information orders have been issued for 243 UIC wells. Information orders will be issued for 223 UIC wells after review and final approval. The Division identified a total of 6,157 wells, therefore, 5,691 wells will not be issued information orders because they did not meet Enclosure D criteria (for disposal or water flood wells) or the criteria discussed above (for steam flood or cyclic steam wells). The table below summarizes the status of the State Water Board's review of the injection wells, status of information orders, and wells pending information orders.

Category of Well	Number of Wells Reviewed	Wells Issued Orders (orders)	Wells Pending Orders
1 (sub-3,000 TDS)	176 (disposal)	156 (34)	0
1 (3,000 to 10,000 TDS)	356 (disposal)	87 (30)	209
2 (sub-10,000 TDS)	5,625 (EOR)	0	14
<b>Total</b>	<b>6,157</b>	<b>243 (64)</b>	<b>223</b>

Please let us know if you have any questions regarding this information.

Sincerely,

  
Jonathan Bishop  
Chief Deputy Director

cc: [Via email]

Kenneth A. Harris Jr., State Oil & Gas Supervisor  
Department of Conservation  
Division of Oil, Gas & Geothermal Resources  
Headquarters  
[kenneth.harris@waterboards.ca.gov](mailto:kenneth.harris@waterboards.ca.gov)

Clay Rodgers, Assistant Executive Officer  
Central Valley Regional Water Quality Control Board  
[clay.rodgers@waterboards.ca.gov](mailto:clay.rodgers@waterboards.ca.gov)

Samuel Unger, Executive Officer  
Los Angeles Regional Water Quality Control Board  
[samuel.unger@waterboards.ca.gov](mailto:samuel.unger@waterboards.ca.gov)

Michael Thomas, Assistant Executive Officer  
Central Coast Regional Water Quality Control Board  
[michael.thomas@waterboards.ca.gov](mailto:michael.thomas@waterboards.ca.gov)

# **EXHIBIT F**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street  
San Francisco, CA 94105-3901

May 17, 2016

Ken Harris  
State Oil and Gas Supervisor  
Division of Oil, Gas and Geothermal Resources  
801 K Street, MS-18-05  
Sacramento, CA 95814-3530

Jonathan Bishop  
Chief Deputy Director  
California State Water Resources Control Board  
P.O. Box 100  
Sacramento, CA 95812-100

Dear Messrs. Harris and Bishop,

I am writing to follow up on our discussions during the most recent Class II Underground Injection Control program update meetings between our agencies. We agreed it was appropriate at this juncture to acknowledge the progress being made and outstanding work still to be accomplished by DOGGR to restore the CA Class II UIC Program to compliance, with the assistance and commitment of the State Water Board. Below is a description of the key areas of focus for these efforts.

UIC Regulations

DOGGR has made good progress toward reforming its UIC regulations. After engaging in several workshops around the state, DOGGR released a discussion draft of revised and updated UIC regulations for public comment on January 21, 2016. EPA provided our comments by letter on March 4, 2016. Continuation of this initial rulemaking effort to completion will mark an important milestone in the path to Class II program compliance, and we are encouraged by the state's efforts to date.

In addition to developing draft UIC regulatory revisions, DOGGR also promulgated final regulations for aquifer exemption compliance deadlines. These regulations, which the state had adopted last year on an emergency basis, establish a number of key regulatory deadlines. Most significantly, the regulations codify the requirement for Class II injection wells injecting into sub-10,000 ppm TDS aquifers to shut-in by February 2017 unless EPA has approved an aquifer exemption for the target formation.

### Aquifer Exemptions

Based on the information shared with EPA regarding potential aquifer exemption (AE) requests, there could be dozens of AE submittals from the state for EPA consideration in the next three to four months. To date, the state has submitted one proposed aquifer exemption package for EPA consideration.

Based on our recent discussions, it is our understanding that the state expects to submit AE requests that would address a significant proportion of the operating injection wells subject to the February 2017 shut-in deadline contained in DOGGR's regulations. In its April 8, 2016 Notice to Operators, DOGGR provided clear direction that the state needs aquifer exemption requests, with complete supporting data, by August 15, 2016 or it will be unlikely for EPA to approve the AE request before February 15, 2017. We support your efforts to inform affected operators of the urgent need for them to submit AE requests. Moreover, EPA is committed to doing our part to review the state's AE proposals submitted by the October 15, 2016 deadline and make final determinations as expeditiously as possible. We also support your efforts to work closely with operators who are not seeking exemptions, or who will not meet the state's deadlines, to ensure an orderly process of shutting in affected Class II wells.

### Risk-Based Water Supply Well and Drinking Water Evaluations

The Water Board's October 21, 2015 letter provided a comprehensive summary of the status of its risk-based water supply well review at that point in time. On March 22, 2016 the Water Board provided an updated summary of progress with this effort. This recent submittal provided an overview of the UIC well review including screening for shut in, further action, or issuance of information orders/notices of violation. Going forward, EPA expects the State to complete its review of the Category 1 and 2 wells<sup>1</sup>. We will include a status update on this activity on our monthly meeting agenda, and request that the state submit a final report for these wells to EPA within the next few months (by mid-September 2016).

It is our understanding that the identification and evaluation of any water supply wells in the vicinity of Category 3 wells<sup>2</sup> will occur as DOGGR proceeds with its "Project-by-Project Review." This effort, described initially in the state's October 2015 "Renewal Plan for Oil and Gas Regulation," is a comprehensive, statewide review of all approved injection projects, and revision of projects as needed to ensure compliance with UIC requirements and protection of groundwater sources. EPA considers this a reasonable approach for the Category 3 well evaluations, and requests notification of any injection wells that are determined to be of potential concern for water supply wells.

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<sup>1</sup> As described in EPA's March 9, 2015 letter to the state, Category 1 wells are Class II disposal wells injecting into non-exempt, non-hydrocarbon-bearing aquifers and the 11 aquifers historically treated as exempt, and Category 2 wells are Class II EOR wells injecting into non-exempt, hydrocarbon-bearing aquifers.

<sup>2</sup> Category 3 wells are Class II disposal or EOR wells that are inside the surface boundaries of exempted aquifers, but that may be injecting into a zone not exempted by EPA.



### DOGGR's Project by Project (PbP) Reviews

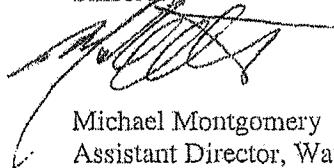
As noted above, the Division's Renewal Plan included a PbP review program that was to commence immediately, and be fully completed with all projects reviewed and Project Approval Letters (PALs) revised as needed within a 3-year timeframe. The first phase, which is currently underway, consists of data collection of existing permitted wells and projects and is on track to be completed by February 15, 2017. The second phase of the PbP review activity, to be completed by March 1, 2018, involves the review and analysis of each UIC project (over 900 projects) for compliance with all DOGGR regulations. Completion of this phase of review may result in issuance of new or revised project approval letters (PALs). As we discussed at our recent meetings, EPA will continue to work with the state to incorporate a risk-based prioritization of project review milestones and their outcome into the state's overall UIC Program Compliance Plan. As we agreed, our team will continue to explore this effort in the coming months with a target of establishing a prioritization approach and integrating that approach into the existing program. In addition to the priorities that the state has tentatively identified -- active gas storage and water/gas disposal projects -- EPA expects that projects within fields where the state is proposing a new or expanded aquifer exemption will also be given priority consideration, such that critical information, for example, area of review evaluations/data, is available for these projects before EPA makes final AE determinations.

### Searchable Database

We appreciate receiving an overview of the status of the WellSTAR database during our March 2016 meeting and a copy of the monthly WellSTAR Project Newsletter. The goal of a searchable database has moved closer to becoming a reality with the progress made on this project, and it will enable Phase I of the PbP reviews to proceed in an organized fashion. We commend DOGGR on these efforts, and look forward to seeing its vision of being a fully digital organization implemented.

Please don't hesitate to contact me with any questions or concerns.

Sincerely,



Michael Montgomery  
Assistant Director, Water Division

PROOF OF SERVICE BY ELECTRONIC TRANSMISSION

I, Lilia H. Jackson, the undersigned, hereby declare as follows:

1. I am over the age of 18 years and am not a party to the within cause. I am employed by Pillsbury Winthrop Shaw Pittman LLP in the County of San Francisco, State of California.

2. My email and business addresses are [lilia.jackson@pillsburylaw.com](mailto:lilia.jackson@pillsburylaw.com); Four Embarcadero Center, 22nd Floor, San Francisco, CA 94111-5998.

3. My mailing address is P.O. Box 2824, San Francisco, CA 94126-2824.

4. On June 14, 2016, at Four Embarcadero Center, 22nd Floor, San Francisco, CA 94111-5998, I served a true copy of the attached document titled exactly

DECLARATION OF BLAINE I. GREEN SUPPORTING THE OPPOSITION OF  
WESTERN STATES PETROLEUM ASSOCIATION, CALIFORNIA INDEPENDENT  
PETROLEUM ASSOCIATION AND INDEPENDENT OIL PRODUCERS AGENCY IN  
RESPONSE TO PLAINTIFFS/PETITIONERS' OPENING BRIEF by sending it via electronic transmission to the following persons at the electronic-mail addresses so indicated:

Stacey Geis  
Tamara T. Zakim  
Earthjustice  
50 California Street, Suite 500  
San Francisco, CA 94111

Email: [sgeis@earthjustice.org](mailto:sgeis@earthjustice.org)  
Email: [tzakim@earthjustice.org](mailto:tzakim@earthjustice.org)

Baine P. Kerr  
California Department of Justice  
Office of the Attorney General  
300 S. Spring Street, Suite 1700  
Los Angeles, CA 90013

Email: [Baine.kerr@doj.ca.gov](mailto:Baine.kerr@doj.ca.gov)

Jeffrey D. Dintzer  
Matthew C. Wickersham  
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333 South Grand Avenue, 47<sup>th</sup> Floor  
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Hollin Kretzmann  
Center for Biological Diversity  
1212 Broadway, Suite 800  
Oakland, CA 94612

Email: [hkretzmann@biologicaldiversity.org](mailto:hkretzmann@biologicaldiversity.org)

1 I declare under penalty of perjury that the foregoing is true and correct. Executed  
2 this 14th day of June, 2016, at San Francisco, California.  
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Lilia H. Jackson  
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